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PLEASE PASS TO EB/ESC/IEC/ENR FOR JOHN WECKER AND EAP/J FOR
LORI SHOEMAKER. PLEASE PASS TO DOE/PI FOR BARBERT/PUMPHREY
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SUBJECT: APERC CONFERENCE HIGHLIGHTS ENERGY SECURITY,
EFFICIENCY AND COAL

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1.(SBU) Summary. At the Asia Pacific Energy Research Centre (APERC) annual conference on energy in the APEC countries, presenters agreed that APEC nations face similar energy security issues that stem from income growth, increased industrialization, and urbanization. Given current prices for oil and natural gas, experts also agreed that coal is the most economical and efficient means of power generation, but that clean-coal technology must continue to be improved to make coal an environmentally attractive, zero-emissions energy solution. End summary.

2.(SBU) The Asia Pacific Energy Research Centre (APERC), part of the Institute of Energy Economics, Japan (IEEJ), held its annual conference on energy in the APEC countries. During the conference, APERC presented its proposed research areas for 2006-07 and invited experts to present papers on regional energy supply and demand as well as the energy markets in Russia, China, and the US.

3.(SBU) APERC Vice President Yonghun Jung presented an APEC energy supply outlook which predicted an increased demand for coal of 1.9 percent versus 1.8 percent for oil and 1.7 percent for natural gas by 2030. He argued that the key drivers of this energy demand would be income growth of 3.5 percent, urbanization of 68 percent (versus 52 percent in 2003) and increased industrial growth of 4.8 percent, versus GDP growth of only 4.1 percent per year. Jung highlighted the expected growth and fast pace of motorization over the next 25 years, coupled with urbanization growth of between 61 percent (China) and 87 percent (North America). Energy use in the electricity sector is likely to grow at the quickest pace, followed by the commercial and transportation sectors. Despite current efforts to break global dependence on oil, imports are expected to increase over the next 25 years with the largest growth occurring in Southeast Asia, due to depletion of the area's own natural resources. (By APERC's calculations, even Indonesia will be a net importer of oil in 10 years time. Furthermore, Thailand, which has seemingly sufficient supplies of natural gas, is expected to import 50% of its domestic supply by 2020.) Jung also noted that the growing need for energy infrastructure and the looming shortage of human resources to manage the sector pose additional concerns for energy security. This sentiment was

echoed in other presentations.

4.(SBU) IEEJ's Senior Research Fellow Yoshimitsu Mimuroto described renewed global interest in coal. The Asia Pacific region in 2004 relied on coal for nearly half of its energy compared to the rest of the world, which averaged a little over one quarter. In the 1980s coal and natural gas were used as substitutes for oil and that phenomenon returned around 2000. Currently Japan imports the largest amount of coal in the world (approximately 20%), primarily from Australia; South Korea is a distant second. Mimuroto demonstrated that coal demand had substantially surpassed IEA projections since 2000 and likely would remain the predominant fuel in power generation over the next two decades, necessitating further development of clean coal technology for reduced emissions. (Mimuroto also noted that US exports of coal have declined relative to the 1980s and early 1990s, and expressed hope that US exports would increase to meet growing world demand.) Already, dust removal technology has produced dramatic emission reductions and the goal is to develop zero-emission technology using combined cycle turbines (CCT). Mimuroto argued that a combination of reasonable prices, competitive CCTs and the Kyoto mechanism for emissions trading produced the best energy mix based on energy security, economic, and environmental considerations. Finally, Mimuroto noted that in Japan METI's current plan is to deploy zero-emission coal plants from around 2030.

5.(SBU) Glen Sweetnam of the Department of Energy's Energy Information Administration (EIA) contended that the effect of high oil prices meant a drop in natural gas consumption and an increase in coal use because the price of natural gas continues to be linked to oil. OPEC appears unwilling to increase production and despite two years of high oil prices, impediments to increased investment in oil production

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persist. Over the past 25 years, GDP in the US has been very resilient despite increases in oil prices, an indication that oil prices play a less influential role in the US economy. The EIA has based its 2006 energy projections in large part on this statistic. Sweetnam did note, however, that unconventional fuel supplies are attractive at current prices -- these sources include oil sands, coal-to-liquids, and ethanol. He also expressed the EIA's view that "peak oil" is not a concern although the EIA continues to follow the issue closely.

6.(SBU) In the context of the 2006 G8 Summit's Russian presidency, presenter Vladimir Ivanov from the Energy Research Institute of Northeast Asia (ERINA) gave details of oil and natural gas projects throughout Russia. He discussed Russia's concern over its dependence on Europe as the dominant destination for oil exports and the transit fees and port charges it must pay to reach western ports. He valued at close to \$230-\$240 billion dollars the new delivery infrastructure Russia must build over the next 15-20 years. Ivanov referred to the Eastern Siberia Pacific Ocean pipeline as the infrastructural backbone of Russia's oil strategy. He also noted that unlike oil and liquid natural gas (LNG) exports, pipeline gas exports depend on the policies and energy choices made by neighboring countries such as China, the Koreans, and Japan. Russia's challenge will be to balance investment against unpredictable energy prices. He suggested that improving energy efficiency in Russia should be seen as an opportunity to improve productivity and spur innovation. The challenge of energy security, rising energy prices and climate change all pointed toward increased emphasis on energy efficiency and de-carbonization of energy sources.

7.(SBU) China's energy resources and environmental constraints were detailed by Zhou Fengqi of the Energy Research Institute of China's National Development and Reform Commission (NDRC). He highlighted China's rapidly increasing energy demand, production, and infrastructure development and

noted the imbalance in supply that persists. Zhou described China's economic growth as lacking a refined developing model and of poor quality based on per capita GDP. Despite China's ranking as the world's second largest energy consumer, its per capita energy consumption is less than 10 percent of the United States. China has an excessive dependence on coal for energy production -- 69 percent versus a world average of 27.2 percent. In addition to poor energy efficiency, the air quality of 60 percent of China's cities did not meet the national environmental standard in 2004.

8.(SBU) APERC's Gusti Sidemen highlighted the importance of governments' roles in environmental regulation and research and development. He noted the challenge APEC countries face in creating attractive conditions for investors and he ranked several international companies on their proven environmental friendliness, safety, vision and other criteria. Sidemen also pointed to the lack of emergency preparedness of developing member economies. He called for an improved investment climate in the energy sector and a more transparent energy market through data exchange.

9.(SBU) Allan Hoffman from the US Department of Energy presented an assessment of the implications of increased world energy demand. He observed that energy is not in short supply. What is in short supply is inexpensive energy that people can afford to buy. Regarding Sweetnam's discussion of "peak oil", Hoffman countered that price volatility is the concern. With limited spare capacity, serious ramifications could result if refinery production is disrupted. Hoffman also noted that consumption of all primary energy sources is expected to increase through 2025 and that increase will likely equal more than half of current demand. Fossil fuels will remain dominant and account for most of the increase in energy use. Oil will still be the largest individual fuel source, with supplies increasingly concentrated in the Middle East. Annual global emissions of CO2 will grow more rapidly than the primary energy supply. Hoffman expressed concern that reliance on fossil fuels leaves the world vulnerable to oil and natural gas supply disruptions and the associated price instability. However, greater attention is now being

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paid to more efficient use of energy and the development of indigenous renewable fuels (solar, wind, biomass, ocean energy), and there is renewed interest in nuclear power and in carbon capture and sequestration.

10.(SBU) For fiscal 2006-07 APERC proposed studies in the areas of (1) urban development and transportation energy demand, (2) inter-fuel competition for road transport, (3) coal power generation in the 21st century, (4) electricity sector deregulation in APEC, (5) water for energy production in APEC, and (6) human resources for the energy sector. Significantly, APERC proposed examining the possible use of natural gas in the transportation sector to evaluate the potential positive impact on stranded gas. There was also discussion on studying existing international negotiations/collaborations, such as APEC Energy Working Group Initiatives, to analyze the current situation and future prospects.
SCHIEFFER